

Do not forget when asked to solve $x^2 = \#$, that $x = \pm\sqrt{\#}$

Name: _____

Remediation - Solving Equations with Square Roots

After you have watched the video from the wiki, you should try the following problems and then use the key to check your work. You should use your calculator to check your work before you use your key, so you have the opportunity to troubleshoot your own work. If you are successful, take the re-evaluation quiz. Be sure to follow the directions there.

Directions: Please determine the real solutions to the following equations. Express your answers with exact values. If the equation has no solution, indicate so by saying "null set."

1. $3x^2 - 7 = 68$

$$3x^2 = 75$$

$$x^2 = 25$$

$$x = \pm 5$$

2. $-5x^2 + 3 = -497$

$$-5x^2 = -500$$

$$x^2 = 100$$

$$x = \pm 10$$

3. $x^2 + 7 = 3$

$$x^2 = -4$$

$$x = \pm \sqrt{-4}$$

cannot square root a neg. and get a real

null set

4. $(2x - 5)^2 = 36$

$$2x - 5 = \pm 6$$

$$2x = 5 \pm 6$$

$$x = \frac{5 \pm 6}{2}$$

$$x = \frac{5 + 6}{2}$$

$$x = \frac{11}{2} = 5.5$$

$$x = \frac{5 - 6}{2}$$

$$x = \frac{-1}{2} = -0.5$$

5. $17 = \frac{1}{2}b^2 - 7$

$$24 = \frac{1}{2}b^2$$

$$48 = b^2$$

$$\pm \sqrt{48} = b$$

$$b = \pm 4\sqrt{3}$$

$$\sqrt{48}$$

$$\sqrt{16 \cdot 3}$$

$$4\sqrt{3}$$

6. $3(r - 5)^2 = 12$

$$(r - 5)^2 = 4$$

$$r - 5 = \pm 2$$

$$r = 5 \pm 2$$

$$r = 5 + 2$$

$$r = 7$$

$$r = 5 - 2$$

$$r = 3$$

7. $-150 = -2(m - 9)^2$

$$75 = (m - 9)^2$$

$$\pm \sqrt{75} = m - 9$$

$$\pm 5\sqrt{3} = m - 9$$

$$9 \pm 5\sqrt{3} = m$$

$$\sqrt{75}$$

$$\sqrt{25 \cdot 3}$$

$$5\sqrt{3}$$

8. $3(x - 7)^2 = -60$

$$(x - 7)^2 = -20$$

$$x - 7 = \pm \sqrt{-20}$$

null set